

IN THE CLAIMS:

Amend Claims 1-4, 7,13-15,17, 18, 20 and 21 as follows and add Claims 22-25:

1. (Currently amended) Hydraulic system, comprising

at least one hydraulic drive means (1) structured and arranged to be coupled to a load (6) to move the same,

a conduit system (10) connected to the hydraulic drive means (1) for conveying hydraulic liquid to and from the hydraulic drive means (1),

the conduit system comprising

a single pump (12) having a first outlet connected to a first port of said hydraulic drive means (1) by a first passage and a second outlet connected to a second port of said hydraulic drive means (1) by a second passage, and structured and arranged for generating a flow of hydraulic fluid in the conduit system (10), and

a motor (13) structured and arranged to power the pump (12), wherein

the pump (12) is structured and arranged to control the flow of hydraulic liquid in said passages circuit (11),

the hydraulic drive means (1) is structured and arranged to be controllable substantially only by controlling the flow of hydraulic liquid in said passages circuit (11) by the pump (12),

at most a single valve (15) is positioned in one of said first and second passages and structured and arranged to fix the hydraulic drive means (1) in position when closed (a passive valve),

said single valve (15) being positioned in said first or second passage adjacent the hydraulic means (1) without intervening conduit lines being joined to said first or second passage therebetween, and

said single pump (12) has only two outlets and is structured and arranged to

(i) pump fluid in one direction to the hydraulic means (1) through said single valve (15) to move the load (6) coupled to the hydraulic means (1), and

(ii) receive energy from the load (6) through the hydraulic means (1) causing fluid to flow in an opposite direction through said single pump (12) and transfer this energy to said motor (13).

2. (Currently amended) Hydraulic system according to claim 1, wherein the pump (12) is arranged to control direction of the flow of hydraulic liquid in said passages circuit (11) and thereby control the direction of action of the hydraulic drive means (1).

3. (Currently amended) Hydraulic system according to claim 1, wherein the pump (12) is arranged to control the flow rate of the hydraulic liquid in said passages circuit (11) and thereby control the effective rate of the hydraulic drive means (1).

4. (Currently amended) Hydraulic system according to claim 1, wherein the motor (13), that powers the pump (12), is arranged to control the pump to control the flow of hydraulic liquid in said passages circuit (11).

5. (Previously Presented) Hydraulic system according to claim 1, wherein said motor (13) is an electrically driven motor.

6. (Previously Presented) Hydraulic system according to claim 1, wherein it comprises means for regenerating mechanical energy transmitted to the hydraulic drive means (1), due to loading of the hydraulic drive means.

7. (Currently amended) Hydraulic system according to claim 6, wherein said energy regeneration means include the motor (13), that is arranged to be driven as a generator by the pump (12), for regeneration of energy when said mechanical energy transmitted to the hydraulic drive means (1) is transformed to liquid energy of the hydraulic liquid in said passages circuit (11) and thereby powers the pump (12).

8. (Previously Presented) Hydraulic system according to claim 6, wherein it comprises means to store regenerated energy.

9. (Previously Presented) Hydraulic system according to claim 8, wherein said energy storage means comprises at least one rechargeable battery.

10. (Previously Presented) Hydraulic system according to claim 6, wherein the motor (13) is powered by the energy regenerated by said energy regenerated means.

11. (Previously Presented) Hydraulic system according to claim 10, wherein the motor (13) is powered by regenerated energy stored in said energy storage means.

12. (Previously Presented) Hydraulic system according to claim 1, wherein the hydraulic drive means (1) is a hydraulic cylinder.

13. (Currently amended) Hydraulic system according to claim 12, wherein the hydraulic cylinder has chambers (4, 5) containing hydraulic liquid, arranged on opposite sides of a piston (2), with a piston rod (3) connected to the piston received in one chamber (5), and the system comprises an arrangement (16-22) arranged to provide a supply of hydraulic liquid to said passages conduit circuit (11) on controlling the hydraulic cylinder (1) to move the piston in a direction for reducing the volume of said one chamber (5) and to tap hydraulic liquid from the passages conduit circuit (11) on movement of the piston in the opposite direction.

14. (Currently amended) Hydraulic system according to claim 13, wherein the arrangement comprises at least two conduits (21, 22) connected to a tank (19) for hydraulic liquid and to the passages conduit circuit (11) via a valve (17, 18) situated in each said conduit (21, 22).

15. (Currently amended) Hydraulic system according to claim 14, wherein a first (22) of the conduits (21, 22) connected to the hydraulic liquid tank (19) has a one-way valve (18) that only makes the flow of hydraulic liquid from the tank (19) to the passages conduit circuit (11) possible to supply hydraulic liquid to the passages conduit circuit on movement of the piston in the direction for reducing the volume in said one chamber (5) when the valve (17) is closed in the second conduit (21) to the tank (19), whereby the second conduit (21) is connected to the passages conduit circuit (11) nearer to said one chamber (5) than to the first conduit (22).

16. (Previously Presented) Hydraulic system according to claim 15, wherein the valve (17) in the second conduit (21) is controllable to be open when the piston is displaced in the direction for reducing the volume in said one chamber (5).

17. (Currently amended) Hydraulic system according to claim 15, wherein the arrangement comprises a third conduit (20) connected, via a valve (16), to the hydraulic liquid tank (19) which is connected to the passages conduit circuit (11) on the opposite side of the first conduit's (22) connection thereto relative to the second conduit (21), and the valve (17) in the second conduit (21) is controllable to be closed and the valve (16) in the third conduit (20) is controllable to be open simultaneously when the piston is displaced in the direction for reducing the volume in said one chamber (5).

18. (Currently amended) Hydraulic system according to claim 2, wherein the pump (12) is arranged to control the flow rate of the hydraulic liquid in said passages circuit (11) and thereby control the effective rate of the hydraulic drive means (1).

19. (Previously Presented) Hydraulic system according to claim 7, wherein it comprises means to store regenerated energy.

20. (Currently amended) Hydraulic system according to claim 16, wherein the arrangement comprises a third conduit (20) connected, via a valve (16), to the hydraulic liquid tank (19) which is connected to the passages conduit circuit (11) on the opposite side of the first conduit's (22) connection thereto relative to the second conduit (21), and the valve (17) in the second conduit (21) is controllable to be closed and the valve (16) in the third conduit (20) is controllable to be open simultaneously when the piston is displaced in the direction for reducing the volume in said one chamber (5).

21. (Currently amended) Hydraulic system according to claim 1, wherein said hydraulic drive means (1) comprises a cylinder (1) and a piston (2) connected to a piston rod (3) and movably positioned within said cylinder (1) to divide said cylinder (1) into two separated chambers (4,5), and

with said single valve (15) positioned in said first or second passage circuit (11) between said pump (12) and one (4) of said two separated chambers (4,5) within said cylinder (1).

22. (New) Hydraulic system according to claim 21, wherein said piston rod (3) is coupled to the load (6) such that upon opening of said single valve (15), the load (6) moves said piston (2) generating flow of hydraulic liquid in the direction opposite to flow generated by said pump (12) to power said pump (12) and transfer the energy to said motor (13).

23. (New) Hydraulic system according to claim 22, wherein said pump (12) is additionally powered by said motor (13) to control rate of movement of said piston (2) by the load (6).

24.(New) Hydraulic system according to claim 1, wherein said hydraulic drive means (1) comprises a cylinder (1) and a piston (2) connected to a piston rod (3) and movably positioned within said cylinder (1) to divide said cylinder (1) into two separated chambers (4,5), and

    said piston rod (3) is coupled to the load (6) such that upon opening of said single valve (15), the load (6) moves said piston (2) generating flow of hydraulic liquid in the direction opposite to flow generated by said pump (12) to power said pump (12) and transfer the energy to said motor (13).

25. (New) Hydraulic system according to claim 24, wherein said pump (12) is additionally powered by said motor (13) to control rate of movement of said piston (2) by the load (6).